<u>Amendments to the Specification</u>:

Please replace the paragraph beginning at page 5, line 23, with the following rewritten paragraph:

- - Fig. 5 is a graph, plotting velocity (ft/sec/psi) versus depth (m), showing a velocity profile measured from the bottom of a bore hole casing to the bottom of the hole; the raw data provides the ragged velocity profile (darker plot), while the normalized smoothed curve (the lighter curve, smoothed over a ~~40~~ <u>forty</u> second interval) is shown overlaying the raw data reduction; - -

Please replace the paragraph beginning at page 9, line 21, with the following paragraph:

- - The inventive technique was used to deduce conductivity variations, relative to depth, in a vertical hole. The results from the invention were compared to conventional "packer test" results with very similar conductivity values. Notably, the conductivity profiler installation according to the present invention required about ~~30~~ <u>thirty</u> minutes for these people to install to 300 ft. In contrast, the packer test procedure required ~~4~~ <u>four</u> days for two people. - -

Please replace the paragraph beginning at page 13, line 10, with the following rewritten paragraph:

- - Reference is made to Fig. 1, showing a liner **10** that has progressed a significant distance down the hole **25**. The liner **10** preferably controllably unwound from a reel **20** and is passed over a roller ~~**5**~~ <u>**15**</u>. The roller assembly ~~**5**~~ <u>**15**</u> is equipped with tension and position metering devices **M**, known in the art, for measuring the amount (length) of liner **10** that has been paid out, as well as for gauging the tension in the down-hole liner due to gravity. Thus, the meter **M** includes an encoder, in operative connection with the axle of the wellhead roller ~~**5**~~ <u>**15**</u>, to measure the depth of the everting liner in time. Additionally, by constantly monitoring the

tension in the liner **10**, the absolute driving pressure of the fluid within the liner can be ascertained, with the tension force providing a correction factor. The metering equipment collected in component **M** also includes a means for monitoring continuously the driving pressure of the everting liner. This driving pressure monitoring means may be a "bubbler" for monitoring the driving fluid level **34** within the liner **10**, or a simple pressure gauge (such as pressure meter **PM2** in Fig. 1a) for directly measuring the driving pressure. Further use of the metering devices **M** in an alternative manner of practicing the invention will be explained later herein. - -

Please replace the paragraph beginning at page 13, line 25, with the following rewritten paragraph:

- - When first inserted at the surface casing **22**, the liner **10** starts with a maximum descent rate. The descent rate is dependent upon the rate at which the ground water **30** is forcibly displaced ~~radial~~ radially outward into adjacent subsurface formations by the descending liner **10**. Each time the unwinding liner **20** covers a significant flow path into an adjacent stratum, for example the sand lens **37** seen in Fig. 2, the liner's descent slows by an amount dependent upon the flow path thereby sealed. Stated differently, passing a large open fracture in a subsurface formation (e.g. within a layer of the saturated zone **29**), or passing a stratum of high permeability, causes a large drop in the liner descent rate. - -

Please replace the paragraph beginning at page 15, line 5, with the following rewritten paragraph:

- - An alternative use for the invention is to measure the velocity of an ascending liner. The liner motion is reversed by pulling upwards on the inverted liner **10** at the top of the hole, and the resulting motion is indicated by a solid, straight directional arrow in Fig. 2. The principles of the alternative method are essentially the same as with a descending liner, simply

approached from a "reversed" perspective. Fig. 2 shows the apparatus of the invention deployed for ascending liner methodology. A liner **10** progresses a significant distance up the hole **25**. The liner **10** preferably controllably wound upon a reel (not shown in Fig. 2) and is passed over a roller ~~**5**~~ <u>**15**</u>. The roller assembly ~~**5**~~ <u>**15**</u> is equipped with tension and position metering devices **M**, known in the art, for measuring the amount (length) of liner **10** that has been paid out or reeled in, as well as for gauging the tension in the down-hole liner due to gravity. Thus, the meter **M** includes an encoder, in operative connection with the axle of the wellhead roller ~~**5**~~ <u>**15**</u>, to measure the depth of the everting liner in time. The metering equipment collected in component **M** also includes a means for monitoring continuously the driving pressure of the everting liner. This driving pressure monitoring means may be a "bubbler" for monitoring the driving fluid level **34** within the liner **10**, or a simple pressure gauge (such as pressure meter **PM2** in Fig. 1a) for directly measuring the driving pressure. Further use of the metering devices **M** in an alternative manner of practicing the invention will be explained later herein. - -

Please replace the paragraph beginning at page 22, line 13, with the following rewritten paragraph:

- - It is noted that the secondary tube **40** may be placed, but is not inflated, during the descent of the main liner **10** while a measurement is being made. The secondary tube **40** is inflated during removal (ascent) only to speed the ~~ascent)~~ <u>ascent</u> of the main liner when no measurements are being performed, thus providing the practical benefit of rapid de-installation of the apparatus. - -

Please replace the (partial) paragraph beginning on page 22, line 32, with the following rewritten paragraph:

- - Prior to removal of the large liner by inversion, the small liner is filled with water to dilate it to a nearly circular cross section (Fig. 13). This opens an interstitial space ~~41between~~ 41 between the liner **21**, the hole wall **25**, and the small liner **40**. The interstitial space serves as a - -

Please replace the paragraph beginning at page 24, line 23, with the following rewritten paragraph:

- - An advantage of the University of Waterloo installation was that a complete set of packer tests had been done on the 330 ft deep, 6 in diameter hole. The comparison of the inventive profiler with the Waterloo data is shown hereafter. The packer testing required ~~4~~ four days to perform. The measurement by the inventive method required about 1.5 hours, including set up. - -

Please replace the (partial) paragraph beginning at page 24, line 28, with the following rewritten paragraph:

- - The velocity profile measured from the bottom of the casing to the bottom of the hole is shown in Fig. 5, a plot of velocity (ft/sec/psi) versus depth (m). The raw data provides the ragged velocity profile (darker plot in Fig. 5). The occasional drops to a zero or near zero velocity are due to operational pauses in the installation. Those can be ignored, but they do affect the smoothed velocity curve. The normalized smoothed curve (the lighter curve, smoothed over a ~~40~~ forty second interval) is shown on top of the raw data reduction. As explained - -